Brüel & Kjær

## When true portability is essential

Graphic recording of your noise and vibration data in the field saves time, makes on-site evaluation easier and presents immediate documentation







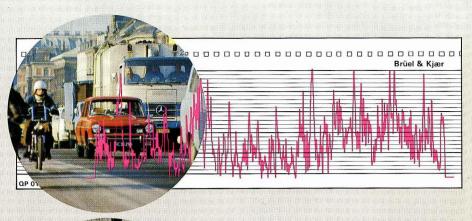
#### **Recording of Level Variations**

### Noise Investigations — L<sub>eq</sub> Determination — Reverberation Time — Sound Insulation

When evaluating the effect of noise for hearing conservation and community response investigations, it is essential to know its character with respect to time. A written record will not only show when, and for how long noise levels were too high, it will also indicate, in many cases, the reason. Reverberation time and impact sound insulation measurements in Building Acoustics are just two more of the many cases where graphic level recording is indispensable.

#### **Vibration Investigations**

When investigating vibration levels, whether it be to determine their effect on man, on the vibration producing mechanism itself or their influence on other structures, level measurements over a period of time will give much valuable information regarding damage risk and dynamic load.





#### **Recording of Frequency Analyses**

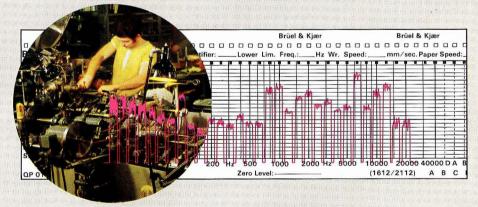
#### **Octave Bandwidth**

Connect an Octave Filter Set Type 1613 to either of the Sound Level Meters Types 2203 or 2209 to create an Octave Band Sound Analyzer. Lamps on the Level Recorder will indicate when to shift filter to obtain a frequency spectrogram directly on frequency calibrated paper.



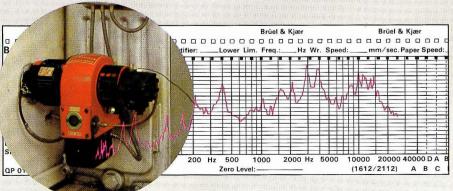
#### **Third Octave Bandwidth**

Connect a Third Octave Filter Set Type 1616 to a SLM Type 2203 or 2209 – or to a 2510 or 2511 Vibration Meter and you get more detailed analyses for use in your noise abatement program or vibration investigation. Here the recorder paper movement is synchronised with the filter switching – a complete spectrogram in a few seconds.



#### Narrow Bandwidth - 3% or 23%

For detailed frequency analysis, use a Tunable Filter Type 1621 with your vibration meter or SLM.  $23^{\circ}/_{\circ}$  ( $1/_{\circ}$  octave) bandwidth for coarse, fast analysis and  $3^{\circ}/_{\circ}$  bandwidth to detail certain areas in the spectrum. Paper movement on the recorder is electrically controlled via the filter tuning to obtain recordings directly on the frequency calibrated paper.

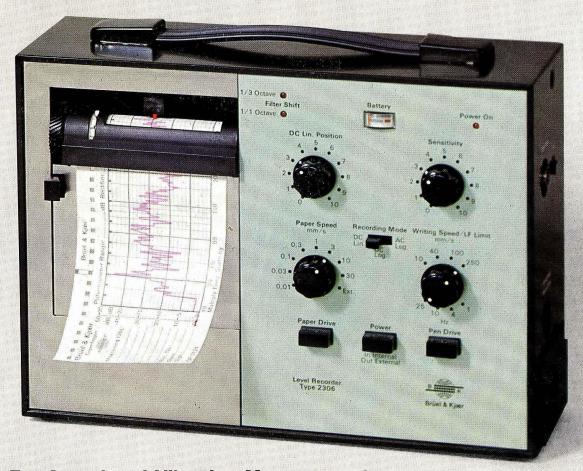


The portable Level Recorder Type 2306 gives you the means for obtaining on-site, written records of your field measurements. Graphic records can be produced of either sound or vibration signals as a function of time — with a choice of paper speed from 0,01 mm/s to 30 mm/s — or of frequency analyses on preprinted, frequency calibrated paper. AC and DC signals can be recorded on a logarithmic scale while DC signals can, in addition, be recorded on a linear scale. In all cases the dynamic range can be either 25 or 50 dB. Power is supplied from 6 built-in, standard batteries. NiCd-cells and a battery charger/line power supply are available. The entire unit weighs only 3,5 kg and is available in two models; either in a metal cabinet or with an additional, rugged, leather carrying case.

Recording your field measurement data directly on this recorder saves the time



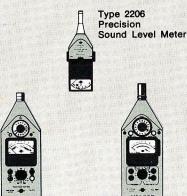
Recording your field measurement data directly on this recorder saves the time normally used for manual plotting, eliminates meter reading errors and gives you the permanent record you need for documentation of your measurements.



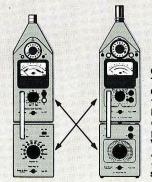
## For Sound and Vibration Measurements — a family of portable Precision Sound — and Vibration Meters and Analyzers



Combination of Vibration Meter with Tunable Filter Type 1621 creates a complete, portable vibration analyser, also available in sturdy carrying case.



Type 2203 Type 2209
Precision Impulse Precision
Sound Level Meter Sound Level Meter



Combinations of SLMs
Types 2203 and 2209
Octave Filter Set Type
1613 or Third Octave
Filter Set Type 1616
create self-contained,
portable Sound and
Vibration Analyzers.
Also available in sets,
complete with all acces—
sories.

# When it is more convenient to process field-acquired data in the laboratory



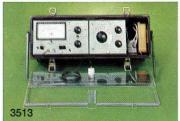
Recording your measurement data on a truly portable instrumentation tape recorder, enables repeated detailed analysis and documentation back in the laboratory, at the most convenient time.

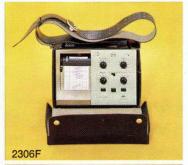
Two precision instrumentation tape recorders are available from Brüel & Kjær. Type 7003, FM recorder with 4 channels and frequency range from DC to 10 kHz, and Type 7004, direct recorder with 2 channels and frequency range 2,5 Hz to 50 kHz. Both truly portable, operate from built-in, NiCdcells or plug-in battery charger/line power supply. Weigh only 7,6 kg and are available in metal cabinet or with additional, rugged, leather carrying case. Plug-in design enables combinations of the two recorders characteristics to be made — a useful feature where both sound and vibration measurements are of interest.



Complete Portable Systems		Types included (+ accessories)
For Octave Band Noise & Vibration Analysis	Sound & Vibration Set Type 3501	2203 1613
	Sound & Vibration Set Type 3507	2209 1613
For Third Octave Band Noise & Vibration Analysis	Sound & Vibration Set Type 3509	2203 1616
	Sound & Vibration Set Type 3511	2209 1616
For narrow band and third octave band vibration analysis	Vibration Analyzer Type 3513	2511 1621







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For further information on the instruments that make accurate field measurement and analysis of sound and vibration easy, contact:

## Brüel & Kjær

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